Title (en)

EMITTER BALLAST BYPASS FOR RADIO FREQUENCY POWER TRANSISTORS

Title (de)

EMITTERBALLAST UEBERBRUECKUNG FÜR RADIOFREQUENZ-LEISTUNGSTRANSISTOREN

Title (fr)

CONTOURNEMENT DES RESISTANCES DE PROTECTION D'EMETTEUR POUR TRANSISTORS DE PUISSANCE HAUTE FREQUENCE

Publication

EP 0811249 B1 20020828 (EN)

Application

EP 96904409 A 19960216

Priority

- SE 9600213 W 19960216
- US 39368395 A 19950224

Abstract (en)

[origin: WO9626548A1] An apparatus and method are provided for bypassing the emitter ballast resistors of a power transistor, thereby increasing transistor gain. In a power transistor of the interdigitated type, bypassing the emitter ballast resistors requires bypassing each individual ballast resistor with a capacitor in parallel. Bypassing is therefore done on the silicon chip. More particularly, in accordance with one embodiment of the invention, an RF power transistor includes a silicon die, an emitter ballast resistor (13) formed on the silicon die, and a bypass capacitor (40) formed on the silicon die and connected in parallel with the emitter ballast resistor (13). The resistor may be a diffused resistor, and the capacitor may be a metal-on-polysilicon capacitor. In accordance with another embodiment of the invention, a method is provided for increasing the gain of an RF transistor formed on a silicon chip and having an emitter ballast resistor formed on the silicon chip, in which a capacitor is formed on the silicon chip and connected in parallel with the ballast resistor.

IPC 1-7

H01L 29/73; H01L 27/06

IPC 8 full level

H01L 21/331 (2006.01); **H01L 27/06** (2006.01); **H01L 29/73** (2006.01); **H01L 29/732** (2006.01)

CPC (source: EP KR US)

H01L 27/0658 (2013.01 - EP US); **H01L 29/73** (2013.01 - KR); **H01L 29/7304** (2013.01 - EP US)

Citation (examination)

TIETZE U., SCHENK CH.: "Halbleiter-Schaltungstechnik", 1989, SPRINGER, BERLIN

Designated contracting state (EPC)

DE ES FR GB IT NL SE

DOCDB simple family (publication)

WO 9626548 A1 19960829; AU 4852596 A 19960911; CA 2213611 A1 19960829; CN 1077333 C 20020102; CN 1181843 A 19980513; DE 69623265 D1 20021002; DE 69623265 T2 20031127; EP 0811249 A1 19971210; EP 0811249 B1 20020828; FI 973463 A0 19970822; FI 973463 A 19971023; HK 1018121 A1 19991210; JP H11500868 A 19990119; KR 100359978 B1 20030516; KR 19980702471 A 19980715; US 5684326 A 19971104

DOCDB simple family (application)

SE 9600213 W 19960216; AU 4852596 A 19960216; CA 2213611 A 19960216; CN 96193307 A 19960216; DE 69623265 T 19960216; EP 96904409 A 19960216; FI 973463 A 19970822; HK 98111605 A 19981029; JP 52560996 A 19960216; KR 19970705871 A 19970823; US 39368395 A 19950224